

What is claimed is:

1. A permanent magnet reluctance motor including
a stator having an armature coil; and
5 a rotor providing magnetic irregularities in a
circumferential direction by respectively providing
permanent magnet in a plurality of permanent magnet
embedding holes within a rotor core so as to cancel a
magnetic flux of an armature passing through between
10 adjacent magnetic poles and by providing non-magnetic region
on a circumferential side of said permanent magnet between
said magnetic poles;
said permanent magnet reluctance motor, comprising:
a plurality of projections configured to fix
15 positional location of said permanent magnets in such a way
as to project into said permanent magnet embedding holes
within said core of said rotor.

2. The permanent magnet reluctance motor according to
20 claim 1,

wherein said projection for positional location of
said permanent magnet is provided on an opposite edge of
said permanent magnet embedding hole to an edge of said non-
magnetic region.

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3. The permanent magnet reluctance motor according to claim 1,

wherein said projection for positional location of said permanent magnet is provided on an edge of said
5 permanent magnet embedding hole on a side of said non-magnetic region.

4. The permanent magnet reluctance motor according to any of claim 1 to 3,

10 wherein said projection for positional location of said permanent magnet is provided so as to project towards a center of said permanent magnet embedding hole and recesses corresponding to said projection is provided in said permanent magnet.

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5. The permanent magnet reluctance motor according to any of claims 1 to 4,

wherein a length of a side where said permanent magnet and said projection for positional location of said
20 permanent magnet make contact is 5% to 75% of said length of a side of said permanent magnet.

6. The permanent magnet reluctance motor according to any of claim 1 to 5,

25 wherein a centrifugal force of said permanent magnet is supported by a face intersecting a direction of

magnetization of said permanent magnet at right angles and on an opposite side of said permanent magnet embedding hole to a side of the non-magnetic region.

5 7. The permanent magnet reluctance motor according to any of claim 1 to 6,

wherein a radiussed portion of a root of said projection for positional location of said permanent magnet is provided on a side of a face intersecting a direction of magnetization of said permanent magnet at right angles and on an opposite side to a side of said non-magnetic region.

8. The permanent magnet reluctance motor according to any of claim 1 to 7,

15 wherein a length in a circumferential direction of a circumferential-side thin-wall region of said permanent magnet embedding hole in said rotor core is no more than 450% of a thickness of said thin-wall region in a radial direction.

20 9. The permanent magnet reluctance motor according to claim 8,

wherein a thickness in a radial direction of said circumferential-side thin-wall region of the permanent magnet embedding hole in said rotor core is at least 0.5 mm or more.

10. The permanent magnet reluctance motor according to any of claim 1 to 9,

wherein a length in a radial direction of said bridge region between adjacent permanent magnet embedding holes in said rotor core is no more than 450% of a thickness in a circumferential direction of a bridge region on a side nearest a center.

10 11. The permanent magnet reluctance motor according to claim 10,

wherein a thickness on the side nearest the center in a circumferential direction of said bridge region between adjacent permanent magnet embedding holes in said rotor core
15 is at least 0.5 mm or more.